Dealing with deniers

Rachel Brazil reviews *How to Talk to a Science Denier: Conversations with Flat Earthers, Climate Deniers, and Others Who Defy Reason* by Lee McIntyre

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Listen up
Lee McIntyre reports that some ways of responding to science deniers are effective at shifting their views.

How to Talk to a Science Denier: Conversations with Flat Earthers, Climate Deniers, and Others Who Defy Reason
Lee McIntyre
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One of the first questions Lee McIntyre, a philosopher at Boston University, poses about those who insist the Earth is flat is: "Can these people be serious?" As one of the most extreme examples of science denial, McIntyre starts his book, *How to Talk to a Science Denier: Conversations with Flat Earthers, Climate Deniers, and Others Who Defy Reason*, by describing his visit to the 2018 Flat Earth International Conference in Denver, US. The answer to his question, he quickly concludes, is "yes, completely so".

McIntyre is the author of several previous books, including *The Scientific Attitude: Defending Science from Denial, Fraud and Pseudoscience*, where he argues that what makes science distinctive is its emphasis on evidence and scientists' willingness to change theories on the basis of new information. His latest book takes the reader through the current literature on the origins of science denial and the motivations of deniers, both political and personal. He dissects several studies on how we might communicate with those who seem to defy reason, and describes some of his own encounters with people who will not accept what most consider irrefutable scientific evidence.

According to McIntyre the story of science denial starts in the 1950s with the tobacco industry's campaign to obfuscate the causal link between smoking and cancer. One executive was quoted saying "doubt is our product" and that approach has become a blueprint for science denial, including climate change scepticism, ever since. McIntyre cites a 2018 US poll in which only 29% of respondents believed that climate change is anthropomorphic. He contrasts this with an account of a trip to the Maldives, where the effects of climate change are already clear to see. "Flat-Earthers may have seemed harmless but this kind of science denial could kill us," he says.

Describing his encounters with flat-Earthers in Denver, McIntyre paints a picture of those attracted to what he sees as almost a cult, finding a mixture of Christian fundamentalists and conspiracy-theory believers. Given his connection to the family of a school shooting victim, one of his most upsetting encounters is with a flat-Earther who also believes that the 2018 Parkland school massacre of 17 people was faked.

McIntyre concludes that many flat-Earthers are emotionally damaged people who harbour resentment and anger towards the elites. What becomes clear to him is that their beliefs are deeply rooted in their identity and sense of belonging – making them much harder to shift. But flat-Earthers are not unique here; McIntyre points out that increasingly many of us support points of view that match the "political team" we feel we belong to, rather than the other way round.

McIntyre provides a useful analysis of how to identify science denial. He describes five elements that are almost always part of the arguments: cherry-picking evidence; belief in conspiracies around the issue; reliance on fake experts; logical errors; and setting impossible levels of evidence for any opposing views. Given this, McIntyre explains that combating science denial can be done by correcting the inaccuracies of the science, but also by pointing out the fallacies in the mode of thinking, known as technique rebuttal.

He also sets out carefully the argument for why we can and should engage with science deniers. A study in 2010 demonstrated a "backfire effect", where presenting the evidence against a person's position causes an even stronger adherence to it – leading to the demoralizing idea that there may be no point in fighting back. But McIntyre reports that these results were never replicated. In fact, a breakthrough experiment done in 2019 by behavioural scientists Philipp Schmid and Cornelia Betsch from the University of Erfurt, Germany, showed that several methods of rebuttal were more effective than no response at all.

However, McIntyre concludes that "we've outrun the literature" in working out how to talk to science deniers and puts forward his own view that "engagement, trust, relationships and values are the keys to real belief change". He sets out to do this himself through building trust face-to-face, by listening without attacking, and showing respect. He describes this approach via conversations he has around several issues. Speaking to coal miners in Pennsylvania, McIntyre finds few outright climate-change deniers willing to talk. He then moves on to those who oppose genetically modified organisms (GMOs). He argues this is another form of denial that has caused harm, by preventing the development of nutrient-enriched

GM crops that could fight malnutrition in poorer countries.

This brings up the issue of whether science denial is only a feature of right-wing ideologies or if there is also a "liberal war on science". While there is not an equivalence, McIntyre argues that those on the left have no right to be smug. For example, the rhetoric and claims that Monsanto deliberately caused food shortages to promote the use of GM foods certainly share the conspiracy thinking found in other forms of science denial.

Having written the book during the COVID-19 pandemic, McIntyre tackles the massive amounts of disinformation that have taken root around it, prophetically foreshadowing the anti-vaccination stance that predominates in some parts of the US. Presumably writing in 2020, he expresses some hope that minds will change and points out that when the focus of the pandemic in the US moved from New York to the rest of the country in 2020, there was less support for the politicians who refused to listen to science. But at the end of 2021 this hope now seems outdated, with disinformation clearly impacting vaccination levels and mask-wearing in states like Texas and Florida, where COVID outbreaks re-emerged.

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Overall, this book presents an authoritative and entertaining account of science denial and how we might fight it, moving smoothly between theory and the author's personal experiences of talking to science deniers. Unfortunately, the book is a little light on those conversations, due to limited opportunities for face-to-face meetings during the pandemic, and McIntyre has few examples of success in persuading deniers to change their minds. He does, however, discuss his future plans to engage with flat-Earthers along with retired physicist Bruce Sherwood. Sherwood has produced a 3D computer model that shows how the flat-Earth sky would really look – nothing like reality. It will certainly be interesting to see if their combined approach can make a difference in future.

McIntyre concludes with a call for scientists to get out of their echo chambers. "We need to start talking to one another again, especially to those with whom we disagree," he says. "But we have to be smart about how we do it." No insulting, no shaming, and lots of empathy and respect. Particularly with the existential threats posed by climate change, he says "We must try to make them understand, we must try to get them to care, but first we have to go out there face to face and begin to talk to them."

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